

TEST REPORT

Applicant: Autel Robotics Co.,Ltd.

Address of Applicant: 9th Floor, Bldg.B1, Zhiyuan, 1001 Xueyuan Rd.,Xili, Nanshan, Shenzhen, China

Manufacturer/Factory: Autel Robotics Co.,Ltd.

Address of Manufacturer/Factory: 9th Floor, Bldg.B1, Zhiyuan, 1001 Xueyuan Rd.,Xili, Nanshan, Shenzhen, China

Equipment Under Test (EUT)

Product Name: EVO II

Model No.: MDCA

Trade Mark: AUTEL

FCC ID: 2AGNTMCA2458A

Applicable standards: FCC CFR Title 47 Part 15 Subpart E Section 15.407

Date of sample receipt: Sep. 17, 2020

Date of Test: Sep. 17, 2020 – Jan. 18, 2021

Date of report issued: Jan. 18, 2021

Test Result : PASS *

* In the configuration tested, the EUT complied with the standards specified above.

Authorized Signature:



Robinson Luo

Laboratory Manager

This results shown in this test report refer only to the sample(s) tested, this test report cannot be reproduced, except in full, without prior written permission of the company. The report would be invalid without specific stamp of test institute and the signatures of compiler and approver.

2 Version

Version No.	Date	Description
00	Jan. 18, 2021	Original

Prepared By:



Date:

Jan. 18, 2021

Project Engineer

Check By:



Date:

Jan. 18, 2021

Reviewer

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4 Test Summary

Test Item	Section in CFR 47	Result
Antenna requirement	15.203	Pass
AC Power Line Conducted Emission	15.207	N/A
Conducted Peak Output Power	15.407(a)(3)	Pass
Channel Bandwidth	15.407(e)	Pass
Power Spectral Density	15.407(a)(3)	Pass
Band Edge	15.407(b)(4)	Pass
Spurious Emission	15.205/15.209/15.407(b)(4)	Pass
Frequency Stability	15.407(g)	Pass

Remarks:

1. Pass: The EUT complies with the essential requirements in the standard.
2. Test according to ANSI C63.10:2013.

4.1 Measurement Uncertainty

Test Item	Frequency Range	Measurement Uncertainty	Notes
Radiated Emission	30MHz-200MHz	3.8039dB	(1)
Radiated Emission	200MHz-1GHz	3.9679dB	(1)
Radiated Emission	1GHz-18GHz	4.29dB	(1)
Radiated Emission	18GHz-40GHz	3.30dB	(1)
AC Power Line Conducted Emission	0.15MHz ~ 30MHz	3.44dB	(1)

Note (1): The measurement uncertainty is for coverage factor of k=2 and a level of confidence of 95%.

5 General Information

5.1 General Description of EUT

Product Name:	EVO II	
Model No.:	MDCA	
Serial No.:	N/A	
Hardware Version:	V202012	
Software Version:	V202012	
Test sample(s) ID:	GTSL202012000140-1	
Sample(s) Status:	Engineer sample	
Operation Frequency:	1.25MHz Bandwidth	5731.00MHz~5801.00MHz
	10MHz Bandwidth	5740.00MHz~5830.00MHz
	20MHz Bandwidth	5740.00MHz~5820.00MHz
Support Bandwidth:	1.25MHz Bandwidth	
	10MHz Bandwidth	
	20MHz Bandwidth	
Channel Numbers:	1.25MHz Bandwidth	71
	10MHz Bandwidth	91
	20MHz Bandwidth	91
Channel Separation:	1MHz	
Modulation Type:	1.25MHz Bandwidth	QPSK
	10MHz Bandwidth	16QAM
	20MHz Bandwidth	16QAM
Antenna Type:	Integral antenna	
Antenna working mode:	1.25MHz Bandwidth	1T2R(Only Antenna 1 transmit signal)
	10MHz Bandwidth	2T2R(Support MIMO)
	20MHz Bandwidth	2T2R(Support MIMO)
Antenna Gain(Original):	Antenna 1:3.4dBi	
	Antenna 2:3.0dBi	
Antenna Gain(Optional):	Antenna 1:2.3dBi	
	Antenna 2:1.6dBi	
Power supply:	DC 11.55V rechargeable battery	

*Directional gain of MIMO mode(Original Antenna)= $10 \log[(10^{G1}/20 + 10^{G2}/20 + \dots + 10^{GN}/20)^2 / NANT]$ dBi=6.213dBi

*Directional gain of MIMO mode(Optional Antenna)= $10 \log[(10^{G1}/20 + 10^{G2}/20 + \dots + 10^{GN}/20)^2 / NANT]$ dBi=4.967dBi

Operation Frequency each of channel			
1.25MHz Bandwidth			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
1	5731	36	5766
2	5732	.....	.....
3	5733	.....	.....
.....			
.....	.....	70	5800
35	5765	71	5801

Operation Frequency each of channel			
10MHz Bandwidth			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
1	5740	46	5785
2	5741	.....	.....
3	5742	.....	.....
.....			
.....	.....	90	5829
45	5784	91	5830

Operation Frequency each of channel			
20MHz Bandwidth			
Channel	Frequency(MHz)	Channel	Frequency(MHz)
1	5740	41	5780
2	5741	.....	.....
3	5742	.....	.....
.....			
.....	.....	80	5819
40	5779	81	5820

Note:

In section 15.31(m), regards to the operating frequency range over 10 MHz, the Lowest frequency, the middle frequency, and the highest frequency of channel were selected to perform the test, and the selected channel see below:

Bandwidth	Frequency(MHz)		
	Lowest channel	Middle channel	Highest channel
1.25MHz	5731.00	5766.00	5801.00
10MHz	5740.00	5785.00	5830.00
20MHz	5740.00	5780.00	5820.00

5.2 Test mode

Transmitting mode	Keep the EUT in continuously transmitting mode
<i>Remark: During the test, the test voltage was tuned from 85% to 115% of the nominal rated supply voltage, and found that the worst case was under the nominal rated supply condition. So the report just shows that condition's data.</i>	

5.3 Description of Support Units

None.

5.4 Deviation from Standards

None.

5.5 Abnormalities from Standard Conditions

None.

5.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations: ● FCC —Registration No.: 381383 Global United Technology Services Co., Ltd., Shenzhen EMC Laboratory has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in files. Registration 381383. ● IC —Registration No.: 9079A The 3m Semi-anechoic chamber of Global United Technology Services Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for radio equipment testing with Registration No.: 9079A ● NVLAP (LAB CODE:600179-0) Global United Technology Services Co., Ltd., is accredited by the National Voluntary Laboratory Accreditation Program (NVLAP). LAB CODE:600179-0

5.7 Test Location

All tests were performed at:
Global United Technology Services Co., Ltd. No. 123-128, Tower A, Jinyuan Business Building, No.2, Laodong Industrial Zone, Xixiang Road, Baoan District, Shenzhen, Guangdong, China 518102 Tel: 0755-27798480 Fax: 0755-27798960

6 Test Instruments list

Radiated Emission:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	3m Semi- Anechoic Chamber	ZhongYu Electron	9.2(L)*6.2(W)* 6.4(H)	GTS250	July. 02 2020	July. 01 2025
2	Control Room	ZhongYu Electron	6.2(L)*2.5(W)* 2.4(H)	GTS251	N/A	N/A
3	EMI Test Receiver	Rohde & Schwarz	ESU26	GTS203	June. 25 2020	June. 24 2021
4	BiConiLog Antenna	SCHWARZBECK MESS-ELEKTRONIK	VULB9163	GTS214	June. 25 2020	June. 24 2021
5	Double -ridged waveguide horn	SCHWARZBECK MESS-ELEKTRONIK	BBHA 9120 D	GTS208	June. 25 2020	June. 24 2021
6	Horn Antenna	ETS-LINDGREN	3160	GTS217	June. 25 2020	June. 24 2021
7	EMI Test Software	AUDIX	E3	N/A	N/A	N/A
8	Coaxial Cable	GTS	N/A	GTS213	June. 25 2020	June. 24 2021
9	Coaxial Cable	GTS	N/A	GTS211	June. 25 2020	June. 24 2021
10	Coaxial cable	GTS	N/A	GTS210	June. 25 2020	June. 24 2021
11	Coaxial Cable	GTS	N/A	GTS212	June. 25 2020	June. 24 2021
12	Amplifier(100kHz-3GHz)	HP	8347A	GTS204	June. 25 2020	June. 24 2021
13	Amplifier(2GHz-20GHz)	HP	84722A	GTS206	June. 25 2020	June. 24 2021
14	Amplifier (18-26GHz)	Rohde & Schwarz	AFS33-18002 650-30-8P-44	GTS218	June. 25 2020	June. 24 2021
15	Band filter	Amindeon	82346	GTS219	June. 25 2020	June. 24 2021
16	Power Meter	Anritsu	ML2495A	GTS540	June. 25 2020	June. 24 2021
17	Power Sensor	Anritsu	MA2411B	GTS541	June. 25 2020	June. 24 2021
18	Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	GTS575	June. 25 2020	June. 24 2021
19	Splitter	Agilent	11636B	GTS237	June. 25 2020	June. 24 2021
20	Loop Antenna	ZHINAN	ZN30900A	GTS534	June. 25 2020	June. 24 2021
21	Breitband hornantenne	SCHWARZBECK	BBHA 9170	GTS579	Oct. 18 2020	Oct. 17 2021
22	Amplifier	TDK	PA-02-02	GTS574	Oct. 18 2020	Oct. 17 2021
23	Amplifier	TDK	PA-02-03	GTS576	Oct. 18 2020	Oct. 17 2021
24	PSA Series Spectrum Analyzer	Rohde & Schwarz	FSP	GTS578	June. 25 2020	June. 24 2021

RF Conducted Test:						
Item	Test Equipment	Manufacturer	Model No.	Serial No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	MXA Signal Analyzer	Agilent	N9020A	GTS566	June. 25 2020	June. 24 2021
2	EMI Test Receiver	R&S	ESCI 7	GTS552	June. 25 2020	June. 24 2021
3	Spectrum Analyzer	Agilent	E4440A	GTS533	June. 25 2020	June. 24 2021
4	MXG vector Signal Generator	Agilent	N5182A	GTS567	June. 25 2020	June. 24 2021
5	ESG Analog Signal Generator	Agilent	E4428C	GTS568	June. 25 2020	June. 24 2021
6	USB RF Power Sensor	DARE	RPR3006W	GTS569	June. 25 2020	June. 24 2021
7	RF Switch Box	Shongyi	RFSW3003328	GTS571	June. 25 2020	June. 24 2021
8	Programmable Constant Temp & Humi Test Chamber	WEWON	WHTH-150L-40-880	GTS572	June. 25 2020	June. 24 2021

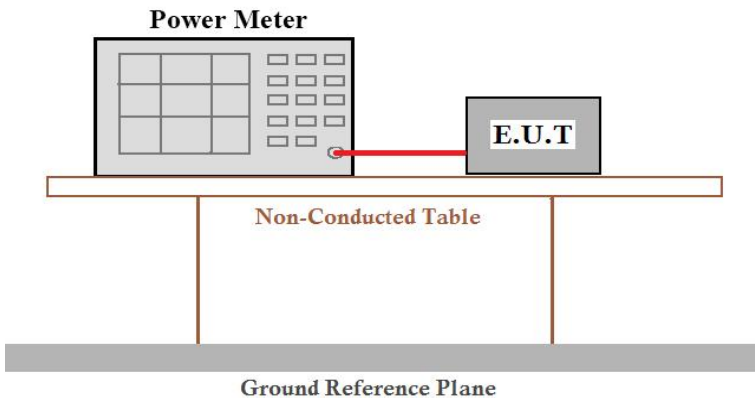
General used equipment:						
Item	Test Equipment	Manufacturer	Model No.	Inventory No.	Cal.Date (mm-dd-yy)	Cal.Due date (mm-dd-yy)
1	Humidity/ Temperature Indicator	KTJ	TA328	GTS243	June. 25 2020	June. 24 2021
2	Barometer	ChangChun	DYM3	GTS255	June. 25 2020	June. 24 2021

7 Test results and Measurement Data

7.1 Antenna requirement

Standard requirement:	FCC Part15 C Section 15.203
<i>15.203 requirement: An intentional radiator shall be designed to ensure that no antenna other than that furnished by the responsible party shall be used with the device. The use of a permanently attached antenna or of an antenna that uses a unique coupling to the intentional radiator, the manufacturer may design the unit so that a broken antenna can be replaced by the user, but the use of a standard antenna jack or electrical connector is prohibited.</i>	
E.U.T Antenna:	
<i>The antennas are integral antenna, the best case gain of the original antenna 1 is 3.4dBi, original antenna 2 is 3.0dBi, the optional antenna 1 is 2.3dBi, optional antenna 2 is 1.6dBi reference to the appendix II for details</i>	

7.2 Conducted Peak Output Power

Test Requirement:	FCC Part15 E Section 15.407(a)(3)
Test Method:	ANSI C63.10:2013 KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 KDB 662911 D01 Multiple Transmitter Output v02r01
Limit:	30dBm
Test setup:	 The diagram illustrates the test setup. A Power Meter is connected to an E.U.T. (Equipment Under Test) via a red cable. Both the Power Meter and the E.U.T. are placed on a Non-Conducted Table. The table is supported by two vertical legs. Below the table is a Ground Reference Plane.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

Antenna 1:

Type	Test Channel	Peak Output Power (dBm)	Limit(dBm)	Result
1.25MHz Bandwidth	Lowest	18.994	30.00	Pass
	Middle	18.257		
	Highest	18.117		
10MHz Bandwidth	Lowest	20.70	30.00	Pass
	Middle	20.79		
	Highest	20.20		
20MHz Bandwidth	Lowest	20.68	30.00	Pass
	Middle	21.01		
	Highest	20.87		

Antenna 2:

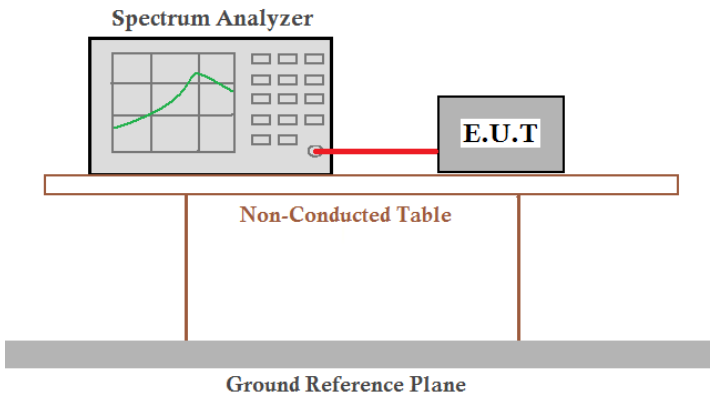
Type	Test Channel	Peak Output Power (dBm)	Limit(dBm)	Result
10MHz Bandwidth	Lowest	20.17	30.00	Pass
	Middle	20.43		
	Highest	20.32		
20MHz Bandwidth	Lowest	20.40	30.00	Pass
	Middle	20.55		
	Highest	20.48		

MIMO:

Type	Test Channel	Peak Output Power (dBm)			Limit(dBm)	Result
		Antenna 1	Antenna 2	Total		
10MHz Bandwidth	Lowest	20.70	20.17	23.45	29.787	Pass
	Middle	20.79	20.43	23.62		
	Highest	20.20	20.32	23.27		
20MHz Bandwidth	Lowest	20.68	20.40	23.55	29.787	Pass
	Middle	21.01	20.55	23.80		
	Highest	20.87	20.48	23.69		

Note: MIMO Limit=30dBm-(6.213-6)dB= 29.787dBm

7.3 Channel Bandwidth

Test Requirement:	FCC Part15 E Section 15.407(e)
Test Method:	ANSI C63.10:2013 KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 KDB 662911 D01 Multiple Transmitter Output v02r01
Limit:	>500KHz
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T are placed on a Non-Conducted Table. The table is supported by a Ground Reference Plane.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

Antenna 1:

Type	Test CH	Channel Bandwidth (MHz)	Limit(KHz)	Result
1.25MHz Bandwidth	Lowest	1.179	>500	Pass
	Middle	1.142		
	Highest	1.150		
10MHz Bandwidth	Lowest	9.044	>500	Pass
	Middle	8.752		
	Highest	8.698		
20MHz Bandwidth	Lowest	17.70	>500	Pass
	Middle	17.37		
	Highest	17.45		

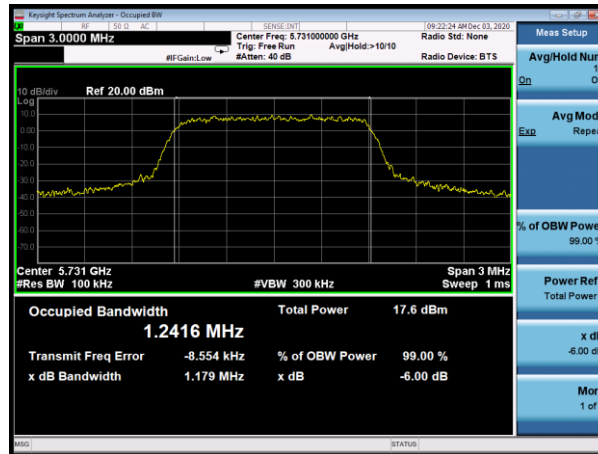
Antenna 2:

Type	Test CH	Channel Bandwidth (MHz)	Limit(KHz)	Result
10MHz Bandwidth	Lowest	8.924	>500	Pass
	Middle	8.771		
	Highest	9.021		
20MHz Bandwidth	Lowest	17.58	>500	Pass
	Middle	17.47		
	Highest	17.41		

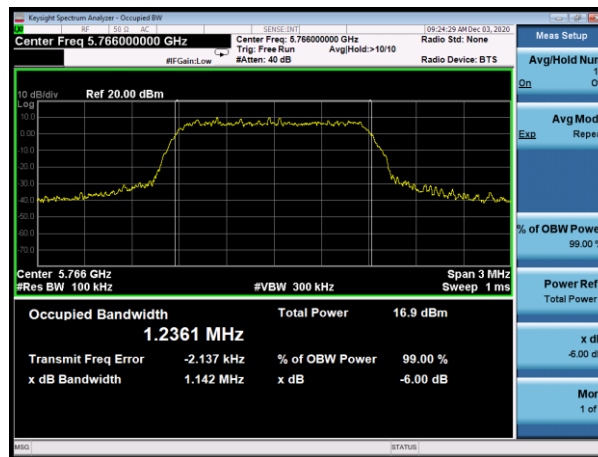
Test plot as follows:

Antenna 1:

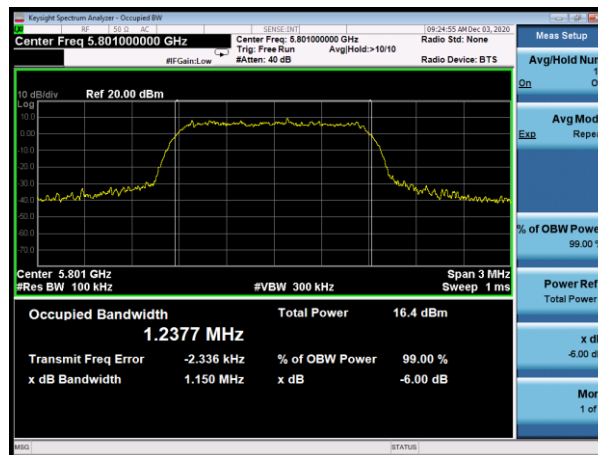
1.25MHz Bandwidth



Lowest channel

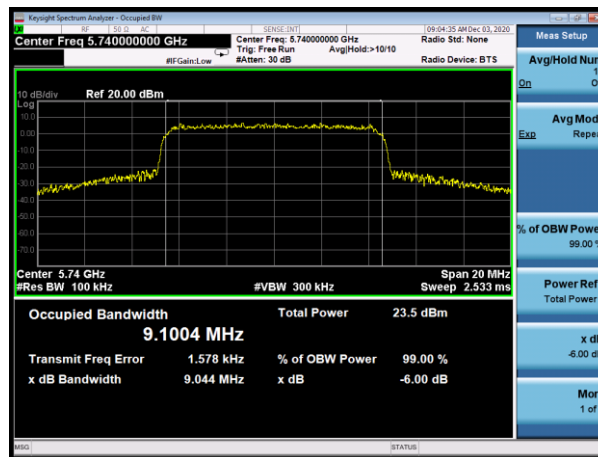


Middle channel

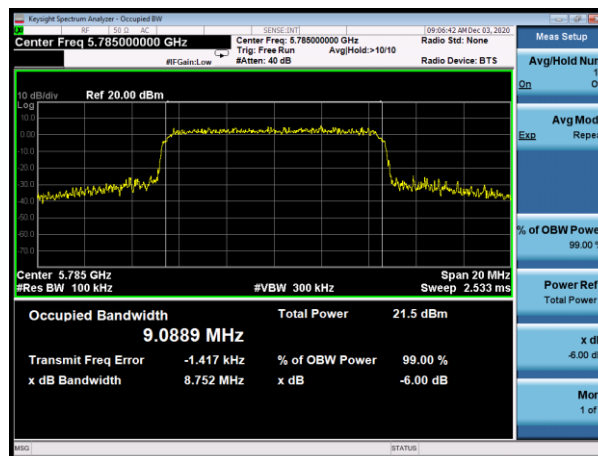


Highest channel

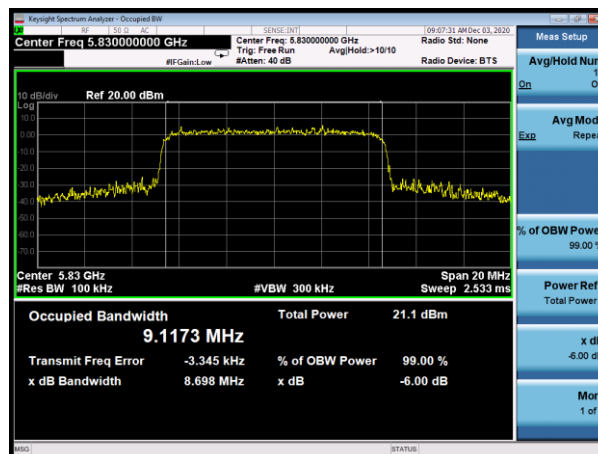
10MHz Bandwidth



Lowest channel

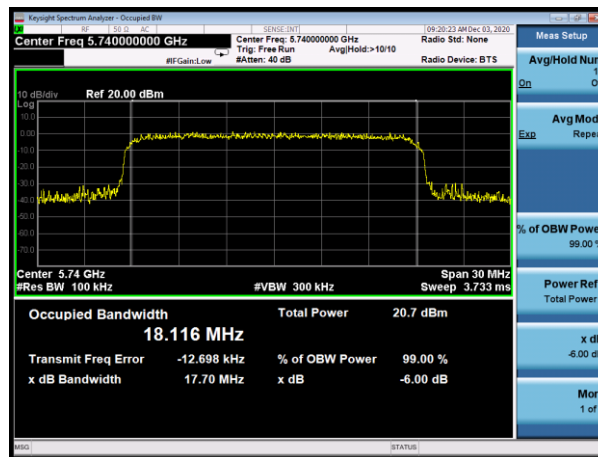


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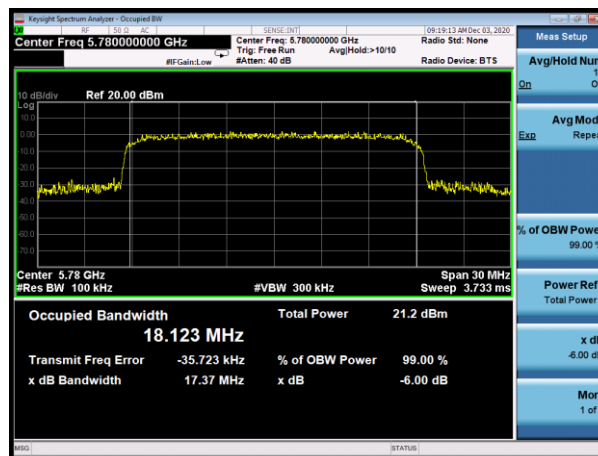


Highest channel

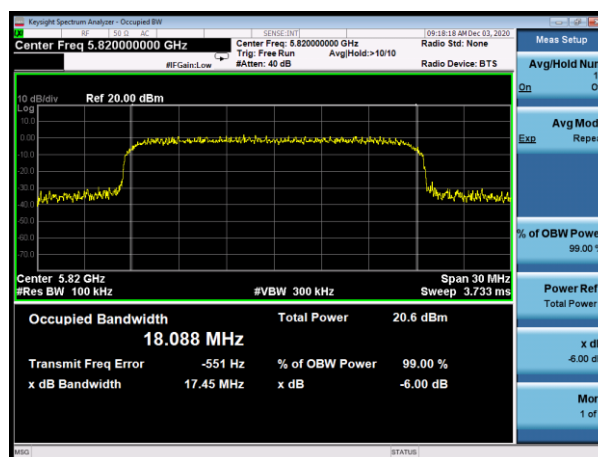
20MHz Bandwidth



Lowest channel



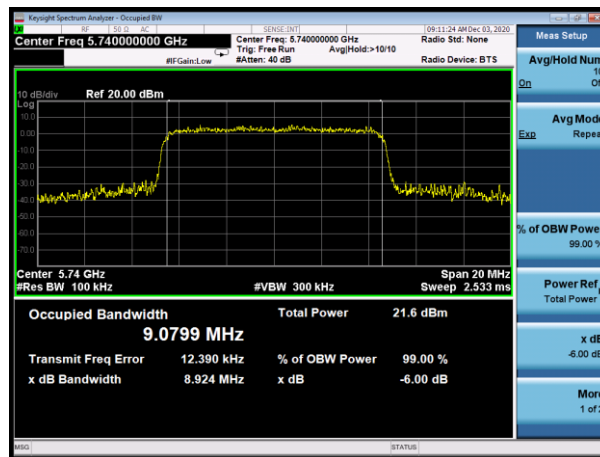
Middle channel



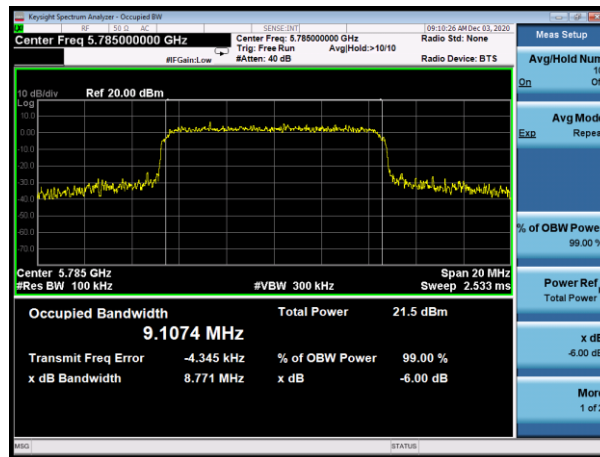
Highest channel

Antenna 2:

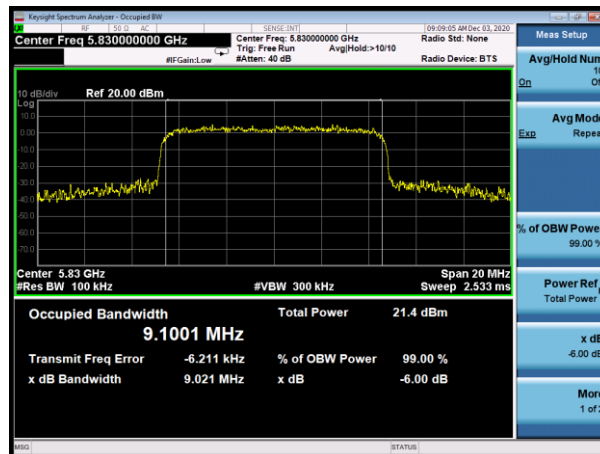
10MHz Bandwidth



Lowest channel

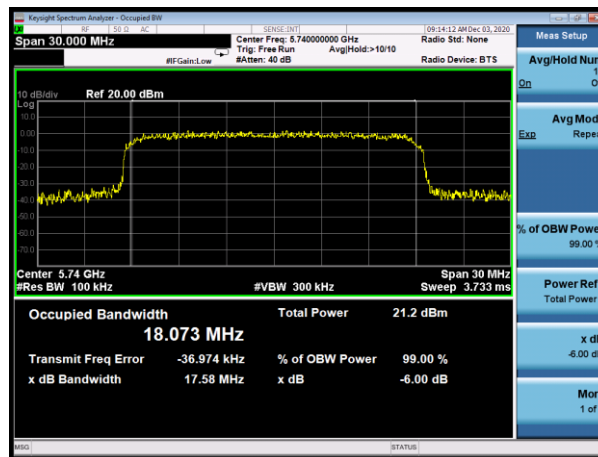


Middle channel

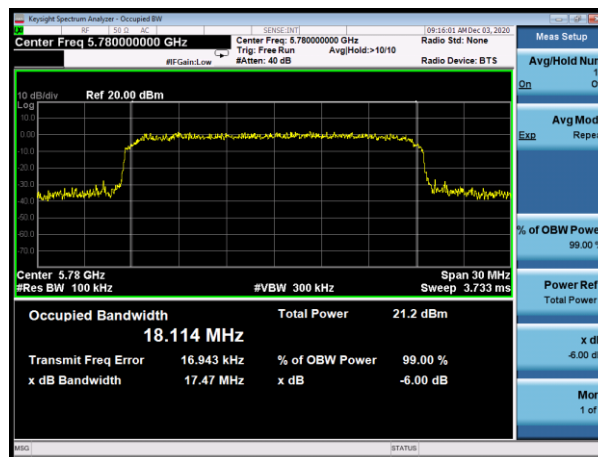


Highest channel

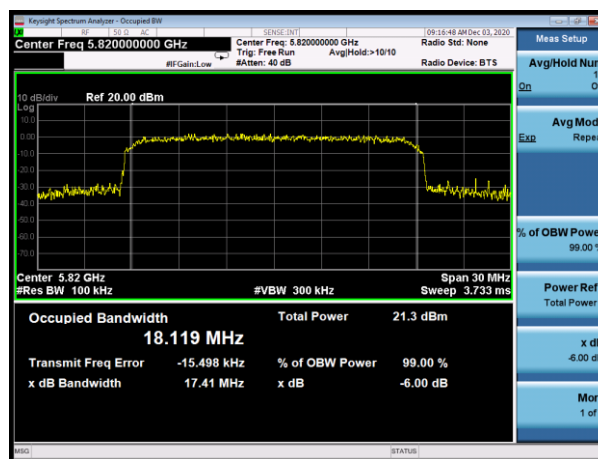
20MHz Bandwidth



Lowest channel

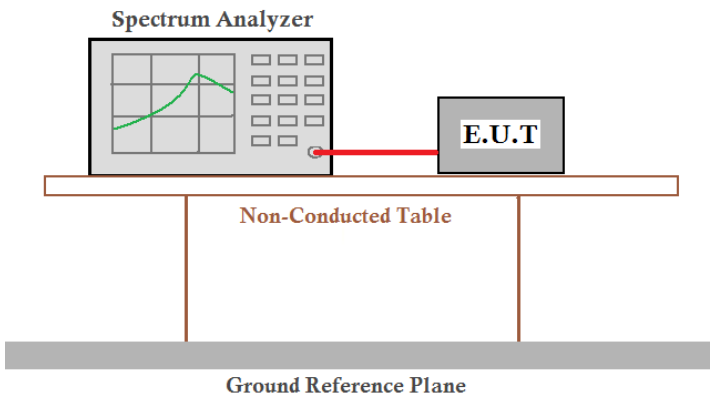


Middle channel



Highest channel

7.4 Power Spectral Density

Test Requirement:	FCC Part15 E Section 15.407(a)(3)
Test Method:	ANSI C63.10:2013 KDB 789033 D02 General U-NII Test Procedures New Rules v02r01 KDB 662911 D01 Multiple Transmitter Output v02r01
Limit:	30dBm/500kHz
Test setup:	 The diagram illustrates the test setup. A Spectrum Analyzer is connected to an E.U.T (Equipment Under Test) via a red cable. Both the Spectrum Analyzer and the E.U.T are placed on a Non-Conducted Table. The table is supported by two vertical legs. Below the table is a Ground Reference Plane.
Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement Data

Antenna 1:

Type	Test CH	Power Spectral Density (dBm/500kHz)	Limit (dBm/500kHz)	Result
1.25MHz Bandwidth	Lowest	17.388	30.00	Pass
	Middle	16.823		
	Highest	16.371		
10MHz Bandwidth	Lowest	14.216	30.00	Pass
	Middle	13.504		
	Highest	13.871		
20MHz Bandwidth	Lowest	11.344	30.00	Pass
	Middle	11.497		
	Highest	12.092		

Antenna 2:

Type	Test CH	Power Spectral Density (dBm/500kHz)	Limit (dBm/500kHz)	Result
10MHz Bandwidth	Lowest	13.130	30.00	Pass
	Middle	13.029		
	Highest	13.998		
20MHz Bandwidth	Lowest	11.234	30.00	Pass
	Middle	12.148		
	Highest	11.473		

MIMO:

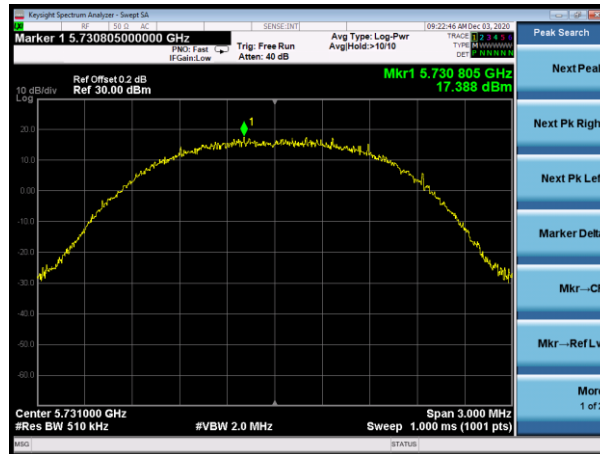
Type	Test Channel	Power Spectral Density (dBm/500kHz)			Limit (dBm/500kHz)	Result
		Antenna 1	Antenna 2	Total		
10MHz Bandwidth	Lowest	14.216	13.130	16.717	29.787	Pass
	Middle	13.504	13.029	16.283		
	Highest	13.871	13.998	16.945		
20MHz Bandwidth	Lowest	11.344	11.234	14.300	29.787	Pass
	Middle	11.497	12.148	14.845		
	Highest	12.092	11.473	14.804		

Note: MIMO Limit=30dBm/500KHz-(6.213-6)dB= 29.787dBm/500KHz

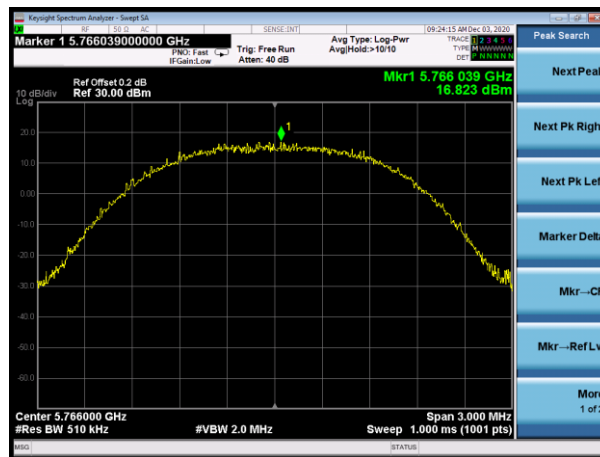
Test plot as follows:

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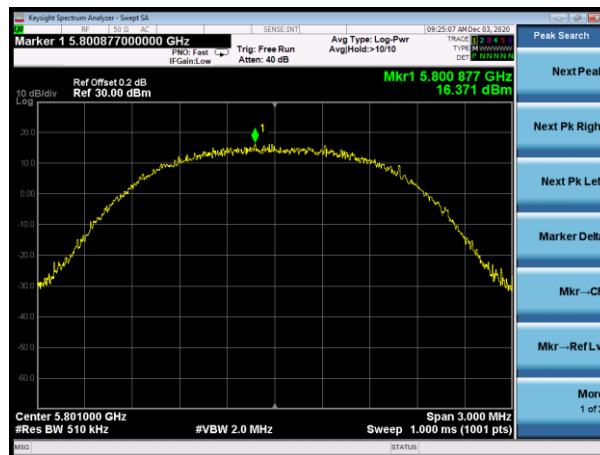
1.25MHz Bandwidth



Lowest channel

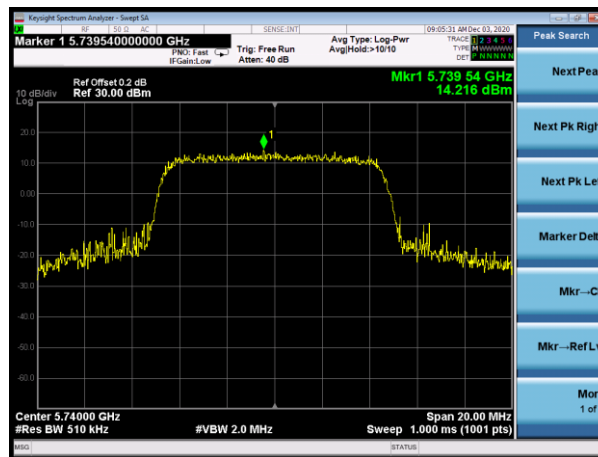


Middle channel

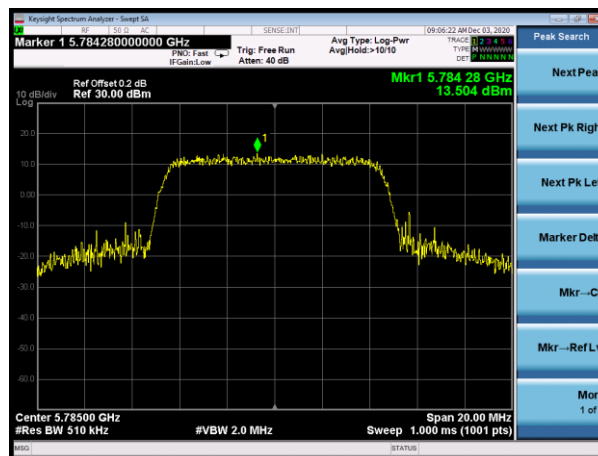


Highest channel

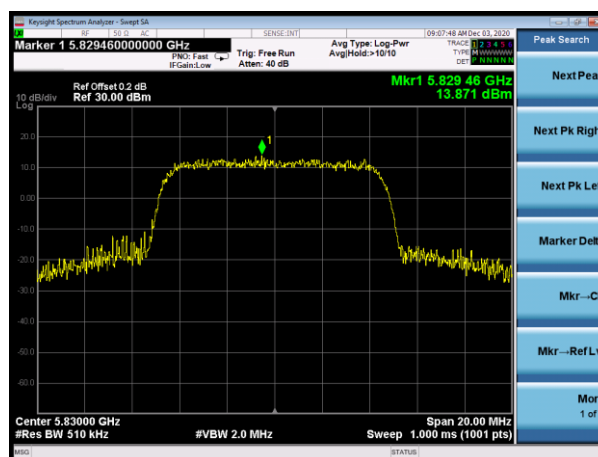
10MHz Bandwidth



Lowest channel

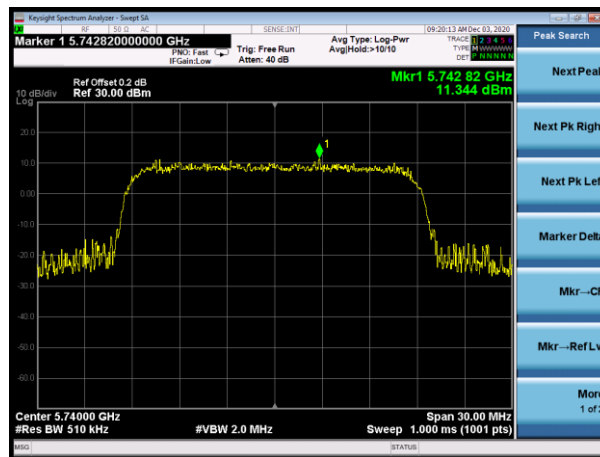


Middle channel

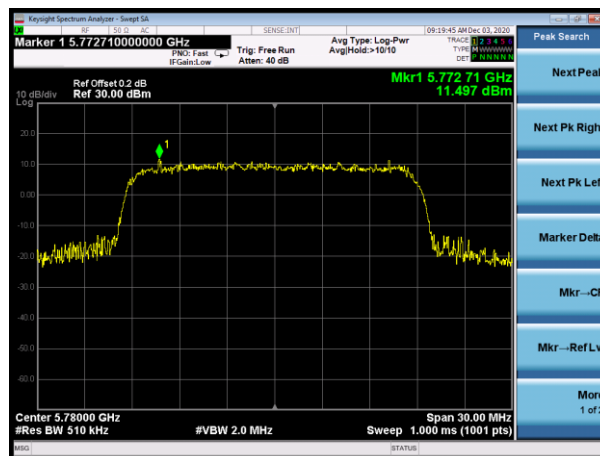


Highest channel

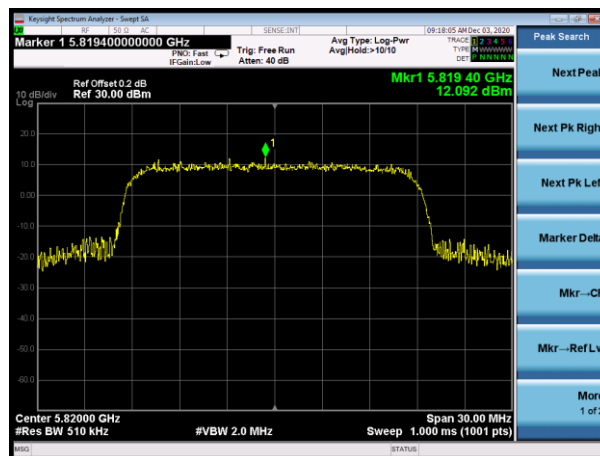
20MHz Bandwidth



Lowest channel



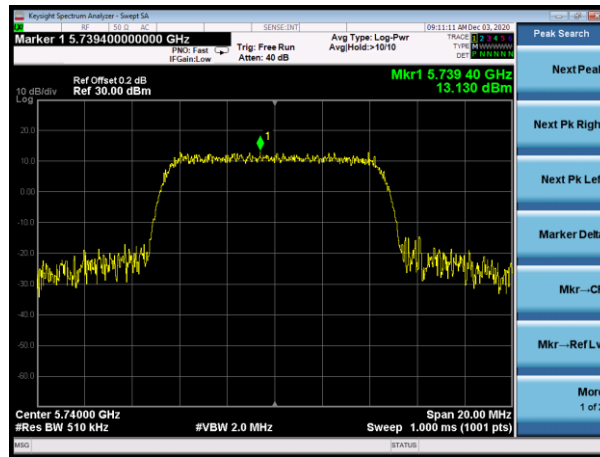
Middle channel



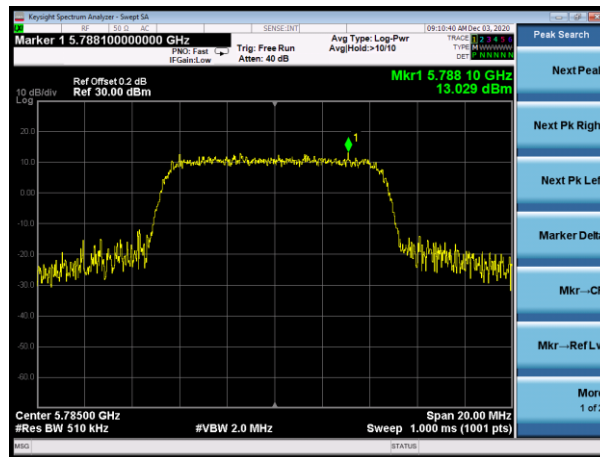
Highest channel

Antenna 2:

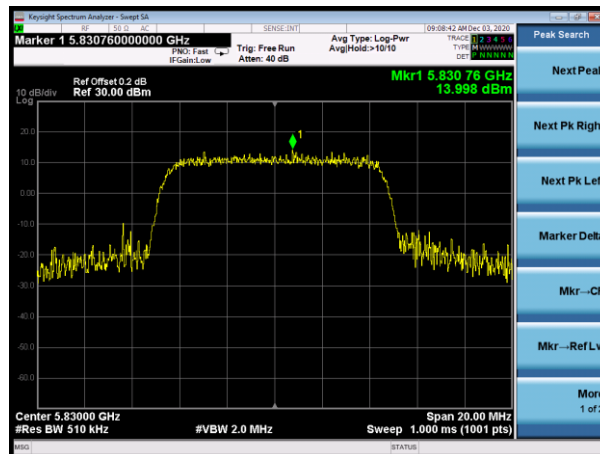
10MHz Bandwidth



Lowest channel

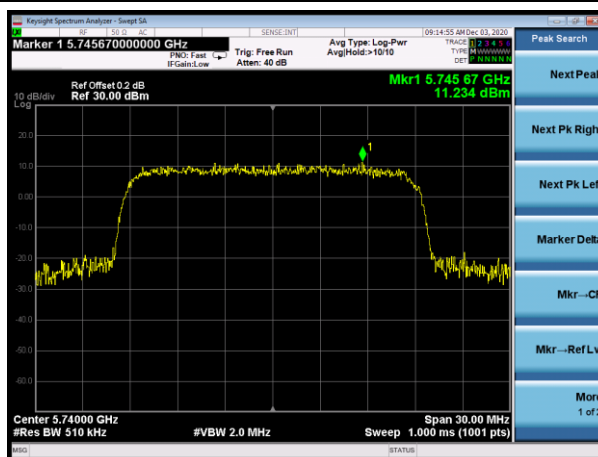


Middle channel

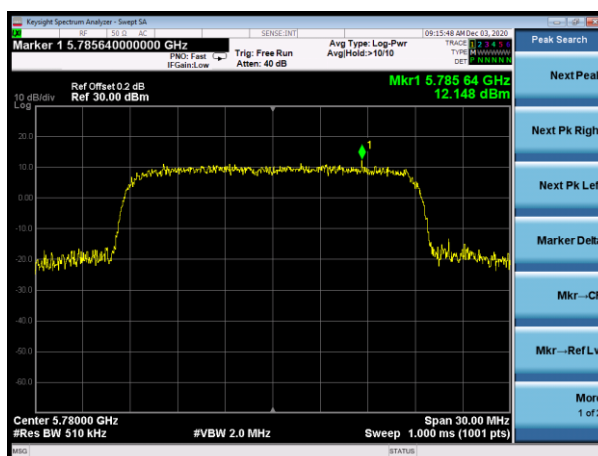


Highest channel

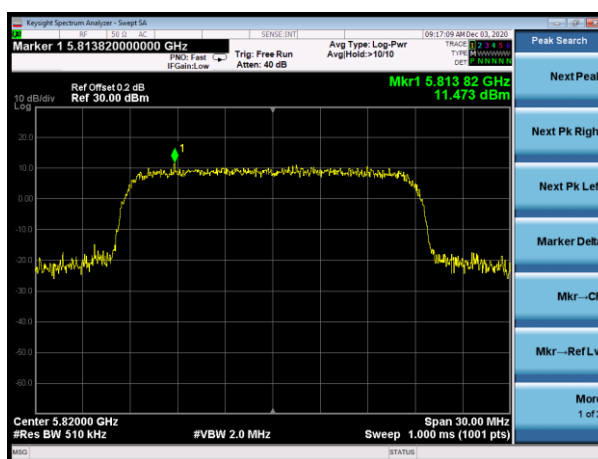
20MHz Bandwidth



Lowest channel



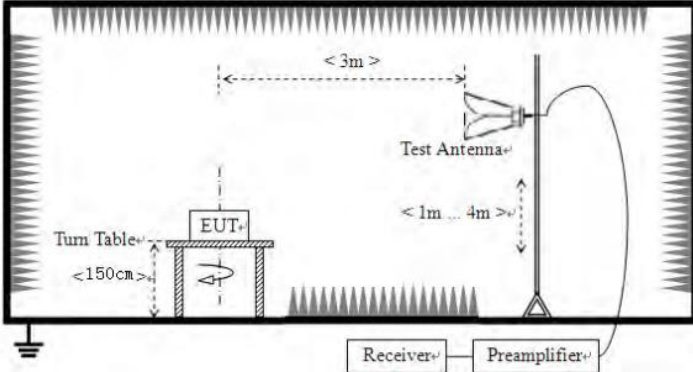
Middle channel



Highest channel

7.5 Band edge

7.5.1 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209 and 15.205				
Test Method:	ANSI C63.10: 2013				
Test Frequency Range:	9kHz to 40GHz, only worse case is reported				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Value
	Above 1GHz	Peak	1MHz	3MHz	Peak
		RMS	1MHz	3MHz	RMS
Limit:	All emissions shall be limited to a level of -27 dBm/MHz at 75 MHz or more above or below the band edge increasing linearly to 10 dBm/MHz at 25 MHz above or below the band edge, and from 25 MHz above or below the band edge increasing linearly to a level of 15.6 dBm/MHz at 5 MHz above or below the band edge, and from 5 MHz above or below the band edge increasing linearly to a level of 27 dBm/MHz at the band edge.				
Test setup:					
Test Procedure:	1. The EUT was placed on the top of a rotating table 1.5 meters above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. 7. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test worst case mode is recorded in the report.				

Test Instruments:	Refer to section 6.0 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Remarks:

- 1. Only the worst case Main Antenna test data..*
- 2. Final Level =Receiver Read level + Antenna Factor + Cable Loss – Preamplifier Factor*
- 3. The emission levels of other frequencies are very lower than the limit and not show in test report.*
- 4. The pre-test were performed on lowest, middle and highest frequencies, only the worst case's (lowest and highest frequencies) data was showed.*
- 5. According to KDB 789033 D02v02r01 section G) 1) d),for measurements above 1000 MHz @3m distance, the limit of field strength is computed as follows:*
$$E[\text{dBuV/m}] = \text{EIRP}[\text{dBm}] + 95.2;$$
$$E[\text{dBuV/m}] = -27 + 95.2 = 68.2\text{dBuV/m}.$$
$$E[\text{dBuV/m}] = 10 + 95.2 = 105.2\text{dBuV/m}.$$
$$E[\text{dBuV/m}] = 15.6 + 95.2 = 110.8\text{dBuV/m}.$$
$$E[\text{dBuV/m}] = 27 + 95.2 = 122.2\text{dBuV/m}$$

Measurement data:

Both original antennas have test, only the worst case original ANT 1 report.

1.25MHz Bandwidth:

Peak value:								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5650.00	37.29	32.36	9.72	23.83	55.54	68.20	-12.66	Horizontal
5700.00	37.78	32.50	9.79	23.84	56.23	105.20	-48.97	Horizontal
5720.00	37.87	32.53	9.81	23.85	56.36	110.80	-54.44	Horizontal
5725.00	40.29	32.53	9.83	23.86	58.79	122.20	-63.41	Horizontal
5850.00	40.73	32.70	9.99	23.87	59.55	122.20	-62.65	Horizontal
5855.00	35.56	32.72	9.99	23.88	54.39	110.80	-56.41	Horizontal
5875.00	37.47	32.74	10.04	23.89	56.36	105.20	-48.84	Horizontal
5925.00	37.14	32.80	10.11	23.90	56.15	68.20	-12.05	Horizontal
5650.00	37.06	32.36	9.72	23.83	55.31	68.20	-12.89	Vertical
5700.00	35.88	32.50	9.79	23.84	54.33	105.20	-50.87	Vertical
5720.00	36.91	32.53	9.81	23.85	55.40	110.80	-55.40	Vertical
5725.00	39.13	32.53	9.83	23.86	57.63	122.20	-64.57	Vertical
5850.00	39.78	32.70	9.99	23.87	58.60	122.20	-63.60	Vertical
5855.00	35.75	32.72	9.99	23.88	54.58	110.80	-56.22	Vertical
5875.00	36.46	32.74	10.04	23.89	55.35	105.20	-49.85	Vertical
5925.00	37.21	32.80	10.11	23.90	56.22	68.20	-11.98	Vertical

10MHz Bandwidth:

Peak value:								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5650.00	36.80	32.36	9.72	23.83	55.05	68.20	-13.15	Horizontal
5700.00	37.67	32.50	9.79	23.84	56.12	105.20	-49.08	Horizontal
5720.00	37.75	32.53	9.81	23.85	56.24	110.80	-54.56	Horizontal
5725.00	45.26	32.53	9.83	23.86	63.76	122.20	-58.44	Horizontal
5850.00	41.70	32.70	9.99	23.87	60.52	122.20	-61.68	Horizontal
5855.00	37.16	32.72	9.99	23.88	55.99	110.80	-54.81	Horizontal
5875.00	36.59	32.74	10.04	23.89	55.48	105.20	-49.72	Horizontal
5925.00	36.45	32.80	10.11	23.90	55.46	68.20	-12.74	Horizontal
5650.00	37.32	32.36	9.72	23.83	55.57	68.20	-12.63	Vertical
5700.00	37.24	32.50	9.79	23.84	55.69	105.20	-49.51	Vertical
5720.00	36.17	32.53	9.81	23.85	54.66	110.80	-56.14	Vertical
5725.00	44.34	32.53	9.83	23.86	62.84	122.20	-59.36	Vertical
5850.00	41.60	32.70	9.99	23.87	60.42	122.20	-61.78	Vertical
5855.00	36.58	32.72	9.99	23.88	55.41	110.80	-55.39	Vertical
5875.00	36.82	32.74	10.04	23.89	55.71	105.20	-49.49	Vertical
5925.00	36.54	32.80	10.11	23.90	55.55	68.20	-12.65	Vertical

20MHz Bandwidth:

Peak value:								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5650.00	37.21	32.36	9.72	23.83	55.46	68.20	-12.74	Horizontal
5700.00	37.70	32.50	9.79	23.84	56.15	105.20	-49.05	Horizontal
5720.00	37.79	32.53	9.81	23.85	56.28	110.80	-54.52	Horizontal
5725.00	40.21	32.53	9.83	23.86	58.71	122.20	-63.49	Horizontal
5850.00	40.70	32.70	9.99	23.87	59.52	122.20	-62.68	Horizontal
5855.00	35.51	32.72	9.99	23.88	54.34	110.80	-56.46	Horizontal
5875.00	37.43	32.74	10.04	23.89	56.32	105.20	-48.88	Horizontal
5925.00	37.11	32.80	10.11	23.90	56.12	68.20	-12.08	Horizontal
5650.00	37.00	32.36	9.72	23.83	55.25	68.20	-12.95	Vertical
5700.00	35.84	32.50	9.79	23.84	54.29	105.20	-50.91	Vertical
5720.00	36.86	32.53	9.81	23.85	55.35	110.80	-55.45	Vertical
5725.00	39.09	32.53	9.83	23.86	57.59	122.20	-64.61	Vertical
5850.00	39.73	32.70	9.99	23.87	58.55	122.20	-63.65	Vertical
5855.00	35.70	32.72	9.99	23.88	54.53	110.80	-56.27	Vertical
5875.00	36.42	32.74	10.04	23.89	55.31	105.20	-49.89	Vertical
5925.00	37.15	32.80	10.11	23.90	56.16	68.20	-12.04	Vertical

Additional test both optional antennas, only the worst case optional ANT 1 report.

1.25MHz Bandwidth:

Peak value:								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamplifier Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5650.00	36.75	32.36	9.72	23.83	55.00	68.20	-13.20	Horizontal
5700.00	37.17	32.50	9.79	23.84	55.62	105.20	-49.58	Horizontal
5720.00	37.32	32.53	9.81	23.85	55.81	110.80	-54.99	Horizontal
5725.00	39.72	32.53	9.83	23.86	58.22	122.20	-63.98	Horizontal
5850.00	40.54	32.70	9.99	23.87	59.36	122.20	-62.84	Horizontal
5855.00	35.19	32.72	9.99	23.88	54.02	110.80	-56.78	Horizontal
5875.00	37.16	32.74	10.04	23.89	56.05	105.20	-49.15	Horizontal
5925.00	36.88	32.80	10.11	23.90	55.89	68.20	-12.31	Horizontal
5650.00	36.67	32.36	9.72	23.83	54.92	68.20	-13.28	Vertical
5700.00	35.59	32.50	9.79	23.84	54.04	105.20	-51.16	Vertical
5720.00	36.58	32.53	9.81	23.85	55.07	110.80	-55.73	Vertical
5725.00	38.90	32.53	9.83	23.86	57.40	122.20	-64.80	Vertical
5850.00	39.45	32.70	9.99	23.87	58.27	122.20	-63.93	Vertical
5855.00	35.40	32.72	9.99	23.88	54.23	110.80	-56.57	Vertical
5875.00	36.21	32.74	10.04	23.89	55.10	105.20	-50.10	Vertical
5925.00	36.78	32.80	10.11	23.90	55.79	68.20	-12.41	Vertical

10MHz Bandwidth:

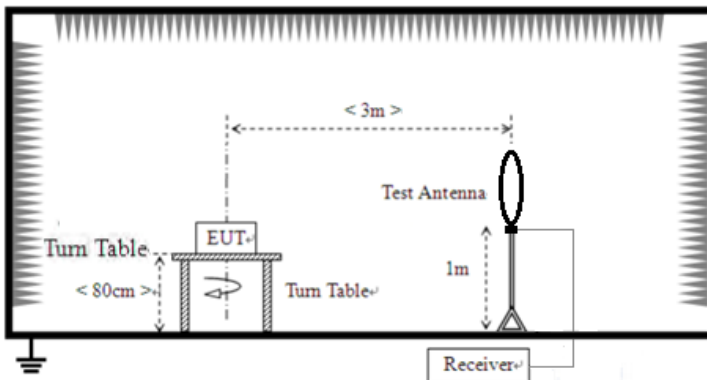
Peak value:								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5650.00	36.80	32.36	9.72	23.83	55.05	68.20	-13.15	Horizontal
5700.00	37.67	32.50	9.79	23.84	56.12	105.20	-49.08	Horizontal
5720.00	37.75	32.53	9.81	23.85	56.24	110.80	-54.56	Horizontal
5725.00	45.26	32.53	9.83	23.86	63.76	122.20	-58.44	Horizontal
5850.00	41.70	32.70	9.99	23.87	60.52	122.20	-61.68	Horizontal
5855.00	37.16	32.72	9.99	23.88	55.99	110.80	-54.81	Horizontal
5875.00	36.59	32.74	10.04	23.89	55.48	105.20	-49.72	Horizontal
5925.00	36.45	32.80	10.11	23.90	55.46	68.20	-12.74	Horizontal
5650.00	37.32	32.36	9.72	23.83	55.57	68.20	-12.63	Vertical
5700.00	37.24	32.50	9.79	23.84	55.69	105.20	-49.51	Vertical
5720.00	36.17	32.53	9.81	23.85	54.66	110.80	-56.14	Vertical
5725.00	44.34	32.53	9.83	23.86	62.84	122.20	-59.36	Vertical
5850.00	41.60	32.70	9.99	23.87	60.42	122.20	-61.78	Vertical
5855.00	36.58	32.72	9.99	23.88	55.41	110.80	-55.39	Vertical
5875.00	36.82	32.74	10.04	23.89	55.71	105.20	-49.49	Vertical
5925.00	36.54	32.80	10.11	23.90	55.55	68.20	-12.65	Vertical

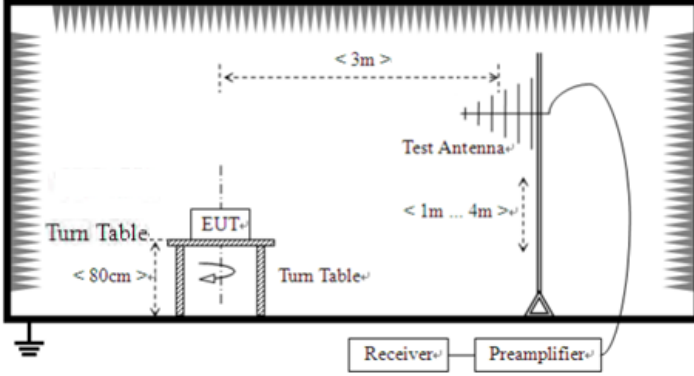
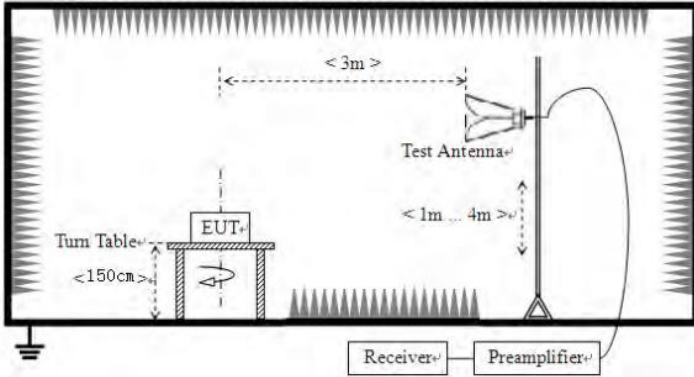
20MHz Bandwidth:

Peak value:								
Frequency (MHz)	Read Level (dBuV)	Antenna Factor (dB/m)	Cable Loss (dB)	Preamp Factor (dB)	Level (dBuV/m)	Limit Line (dBuV/m)	Over Limit (dB)	Polarization
5650.00	36.26	32.36	9.72	23.83	54.51	68.20	-13.69	Horizontal
5700.00	37.06	32.50	9.79	23.84	55.51	105.20	-49.69	Horizontal
5720.00	37.20	32.53	9.81	23.85	55.69	110.80	-55.11	Horizontal
5725.00	44.69	32.53	9.83	23.86	63.19	122.20	-59.01	Horizontal
5850.00	41.51	32.70	9.99	23.87	60.33	122.20	-61.87	Horizontal
5855.00	36.79	32.72	9.99	23.88	55.62	110.80	-55.18	Horizontal
5875.00	36.28	32.74	10.04	23.89	55.17	105.20	-50.03	Horizontal
5925.00	36.19	32.80	10.11	23.90	55.20	68.20	-13.00	Horizontal
5650.00	36.93	32.36	9.72	23.83	55.18	68.20	-13.02	Vertical
5700.00	36.95	32.50	9.79	23.84	55.40	105.20	-49.80	Vertical
5720.00	35.84	32.53	9.81	23.85	54.33	110.80	-56.47	Vertical
5725.00	44.11	32.53	9.83	23.86	62.61	122.20	-59.59	Vertical
5850.00	41.27	32.70	9.99	23.87	60.09	122.20	-62.11	Vertical
5855.00	36.23	32.72	9.99	23.88	55.06	110.80	-55.74	Vertical
5875.00	36.57	32.74	10.04	23.89	55.46	105.20	-49.74	Vertical
5925.00	36.11	32.80	10.11	23.90	55.12	68.20	-13.08	Vertical

7.6 Spurious Emission

7.6.1 Radiated Emission Method

Test Requirement:	FCC Part15 C Section 15.209, Part 15E Section 15.407(b)(4)				
Test Method:	ANSI C63.10:2013				
Test Frequency Range:	9kHz to 40GHz				
Test site:	Measurement Distance: 3m				
Receiver setup:	Frequency	Detector	RBW	VBW	Value
	9kHz-150KHz	Quasi-peak	200Hz	1kHz	Quasi-peak Value
	150kHz-30MHz	Quasi-peak	9kHz	30kHz	Quasi-peak Value
	30MHz-1GHz	Quasi-peak	100KHz	300KHz	Quasi-peak Value
	Above 1GHz	Peak	1MHz	3MHz	Peak Value
AV		1MHz	3MHz	Average Value	
Limit:	Frequency		Limit (uV/m)	Value	Measurement Distance
	0.009MHz-0.490MHz		2400/F(KHz)	QP	300m
	0.490MHz-1.705MHz		24000/F(KHz)	QP	300m
	1.705MHz-30MHz		30	QP	30m
	30MHz-88MHz		100	QP	3m
	88MHz-216MHz		150	QP	
	216MHz-960MHz		200	QP	
	960MHz-1GHz		500	QP	
	Frequency		Limit (dBm/MHz)		Remark
Above 1GHz		-27.0		Peak Value	
Test setup:	For radiated emissions from 9kHz to 30MHz				
					
	For radiated emissions from 30MHz to 1GHz				

	 For radiated emissions above 1GHz 
Test Procedure:	1. The EUT was placed on the top of a rotating table (0.8m for below 1GHz and 1.5 meters for above 1GHz) above the ground at a 3 meter camber. The table was rotated 360 degrees to determine the position of the highest radiation. 2. The EUT was set 3 meters away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3. The antenna height is varied from one meter to four meters above the ground to determine the maximum value of the field strength. Both horizontal and vertical polarizations of the antenna are set to make the measurement. 4. For each suspected emission, the EUT was arranged to its worst case and then the antenna was tuned to heights from 1 meter to 4 meters and the rota table was turned from 0 degrees to 360 degrees to find the maximum reading. 5. The test-receiver system was set to Peak Detect Function and Specified Bandwidth with Maximum Hold Mode. 6. If the emission level of the EUT in peak mode was 10dB lower than the limit specified, then testing could be stopped and the peak values of the EUT would be reported. Otherwise the emissions that did not have 10dB margin would be re-tested one by one using peak, quasi-peak or average method as specified and then reported in a data sheet. 7. The radiation measurements are performed in X, Y, Z axis positioning. And found the X axis positioning which it is worse case, only the test

	worst case mode is recorded in the report.					
Test Instruments:	Refer to section 6.0 for details					
Test mode:	Refer to section 5.2 for details					
Test environment:	Temp.:	25 °C	Humid.:	52%	Press.:	1012mbar
Test voltage:	AC 120V, 60Hz					
Test results:	Pass					

Remarks:

1. Pre-scan all kind of the place mode (X-axis, Y-axis, Z-axis), and found the Y-axis which it is worse case.
2. This product have different configurations include with and without RTK, and mounted three types of cameras. They are EVO II, EVO II Pro and EVO II Dual. Only show the worst case with RTK and configuration EVO II Dual camera on the report.

Measurement Data:

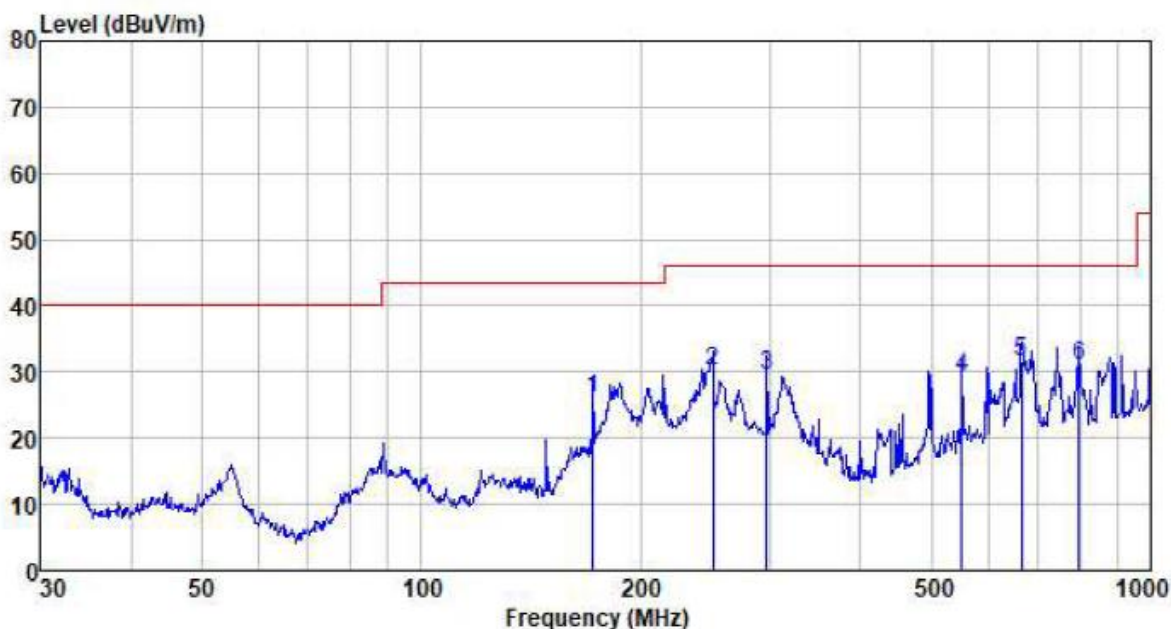
9 kHz ~ 30 MHz

The low frequency, which started from 9 kHz to 30 MHz, was pre-scanned and the result which was 20 dB lower than the limit line per 15.31(o) was not reported.

Below 1GHz

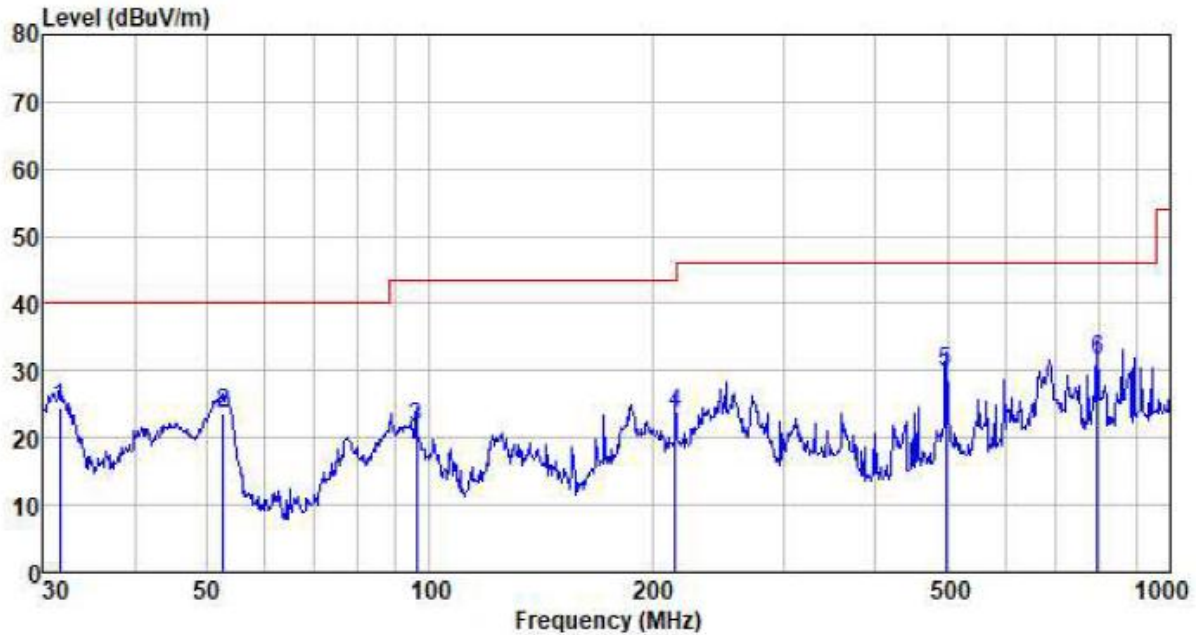
Pre-scan all test modes, found worst case at original antenna 1 of 5780MHz 20MHz bandwidth, and so only show the test result original antenna 1 of 5780MHz 20MHz bandwidth.

Horizontal:



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
171.995	44.96	8.50	1.70	29.31	25.85	43.50	-17.65	QP
251.180	45.83	11.85	2.13	29.65	30.16	46.00	-15.84	QP
297.224	43.83	13.40	2.35	29.99	29.59	46.00	-16.41	QP
550.948	36.46	18.40	3.53	29.30	29.09	46.00	-16.91	QP
665.804	37.12	19.62	3.97	29.23	31.48	46.00	-14.52	QP
796.183	34.35	21.25	4.45	29.20	30.85	46.00	-15.15	QP

Vertical:



Freq MHz	Reading level dBuV	Antenna factor dB/m	Cable loss dB	Preamp factor dB	level dBuV	Limit level dBuV/m	Over limit dB	Remark
31.620	42.69	11.25	0.57	30.09	24.42	40.00	-15.58	QP
52.575	40.89	11.93	0.79	29.98	23.63	40.00	-16.37	QP
96.099	38.83	11.35	1.16	29.72	21.62	43.50	-21.88	QP
214.514	40.31	10.69	1.93	29.35	23.58	43.50	-19.92	QP
497.677	38.46	17.44	3.29	29.31	29.88	46.00	-16.12	QP
796.183	35.15	21.25	4.45	29.20	31.65	46.00	-14.35	QP

Above 1GHz:

1.25MHz Bandwidth:

Test channel:		Lowest					
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11462.00	23.21	21.64	44.85	68.20	-23.35	PK
V	17193.00	20.80	21.8	42.60	68.20	-25.60	PK
H	11462.00	21.15	21.83	42.98	68.20	-25.22	PK
H	17193.00	19.86	21.67	41.53	68.20	-26.67	PK

Test channel:		Middle					
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11532.00	21.04	21.64	42.68	68.20	-25.52	PK
V	17298.00	19.59	21.8	41.39	68.20	-26.81	PK
H	11532.00	17.53	21.83	39.36	68.20	-28.84	PK
H	17298.00	18.10	21.67	39.77	68.20	-28.43	PK

Test channel:		Highest					
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11602.00	21.21	21.64	42.85	68.20	-25.35	PK
V	17403.00	18.68	21.8	40.48	68.20	-27.72	PK
H	11602.00	19.19	21.83	41.02	68.20	-27.18	PK
H	17403.00	17.16	21.67	38.83	68.20	-29.37	PK

10 MHz Bandwidth:

Test channel:		Lowest					
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11480.00	22.83	21.64	44.47	68.20	-23.73	PK
V	17220.00	20.49	21.8	42.29	68.20	-25.91	PK
H	11480.00	20.71	21.83	42.54	68.20	-25.66	PK
H	17220.00	19.46	21.67	41.13	68.20	-27.07	PK

Test channel:		Middle					
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11570.00	20.66	21.64	42.30	68.20	-25.90	PK
V	17355.00	19.28	21.8	41.08	68.20	-27.12	PK
H	11570.00	17.09	21.83	38.92	68.20	-29.28	PK
H	17355.00	17.70	21.67	39.37	68.20	-28.83	PK

Test channel:		Highest					
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11660.00	20.83	21.64	42.47	68.20	-25.73	PK
V	17490.00	18.37	21.8	40.17	68.20	-28.03	PK
H	11660.00	18.75	21.83	40.58	68.20	-27.62	PK
H	17490.00	16.76	21.67	38.43	68.20	-29.77	PK

20MHz Bandwidth:

Test channel:		Lowest					
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11480.00	22.97	21.64	44.61	68.20	-23.59	PK
V	17220.00	20.60	21.8	42.40	68.20	-25.80	PK
H	11480.00	20.87	21.83	42.70	68.20	-25.50	PK
H	17220.00	19.60	21.67	41.27	68.20	-26.93	PK

Test channel:		Middle					
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11560.00	20.80	21.64	42.44	68.20	-25.76	PK
V	17340.00	19.39	21.8	41.19	68.20	-27.01	PK
H	11560.00	17.25	21.83	39.08	68.20	-29.12	PK
H	17340.00	17.84	21.67	39.51	68.20	-28.69	PK

Test channel:		Highest					
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11640.00	20.97	21.64	42.61	68.20	-25.59	PK
V	17460.00	18.48	21.8	40.28	68.20	-27.92	PK
H	11640.00	18.91	21.83	40.74	68.20	-27.46	PK
H	17460.00	16.90	21.67	38.57	68.20	-29.63	PK

Notes:

1. Measure Level = Reading Level + Factor.
2. The test trace is same as the ambient noise (the test frequency range: 18GHz~40GHz), therefore no data appear in the report.
3. This limit applies for using peak detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.
4. Pre-scan both original antenna 1 and antenna 2, found original antenna 1 is the worst case, and so only show the test result of original antenna 1.

Additional test of the operational Antenna

1.25MHz Bandwidth:

Test channel:		Lowest					
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11462.00	22.26	21.64	43.90	68.20	-24.30	PK
V	17193.00	20.02	21.80	41.82	68.20	-26.38	PK
H	11462.00	20.04	21.83	41.87	68.20	-26.33	PK
H	17193.00	18.86	21.67	40.53	68.20	-27.67	PK

Test channel:		Middle					
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11532.00	20.09	21.64	41.73	68.20	-26.47	PK
V	17298.00	18.81	21.80	40.61	68.20	-27.59	PK
H	11532.00	16.42	21.83	38.25	68.20	-29.95	PK
H	17298.00	17.10	21.67	38.77	68.20	-29.43	PK

Test channel:		Highest					
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11602.00	20.26	21.64	41.90	68.20	-26.30	PK
V	17403.00	17.90	21.80	39.70	68.20	-28.50	PK
H	11602.00	18.08	21.83	39.91	68.20	-28.29	PK
H	17403.00	16.16	21.67	37.83	68.20	-30.37	PK

10 MHz Bandwidth:

Test channel:		Lowest					
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11480.00	22.64	21.64	44.28	68.20	-23.92	PK
V	17220.00	20.33	21.80	42.13	68.20	-26.07	PK
H	11480.00	20.49	21.83	42.32	68.20	-25.88	PK
H	17220.00	19.26	21.67	40.93	68.20	-27.27	PK

Test channel:		Middle					
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11570.00	20.47	21.64	42.11	68.20	-26.09	PK
V	17355.00	19.12	21.80	40.92	68.20	-27.28	PK
H	11570.00	16.87	21.83	38.70	68.20	-29.50	PK
H	17355.00	17.50	21.67	39.17	68.20	-29.03	PK

Test channel:		Highest					
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11660.00	20.64	21.64	42.28	68.20	-25.92	PK
V	17490.00	18.21	21.80	40.01	68.20	-28.19	PK
H	11660.00	18.53	21.83	40.36	68.20	-27.84	PK
H	17490.00	16.56	21.67	38.23	68.20	-29.97	PK

20MHz Bandwidth:

Test channel:		Lowest					
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11480.00	22.53	21.64	44.17	68.20	-24.03	PK
V	17220.00	20.24	21.80	42.04	68.20	-26.16	PK
H	11480.00	20.35	21.83	42.18	68.20	-26.02	PK
H	17220.00	19.14	21.67	40.81	68.20	-27.39	PK

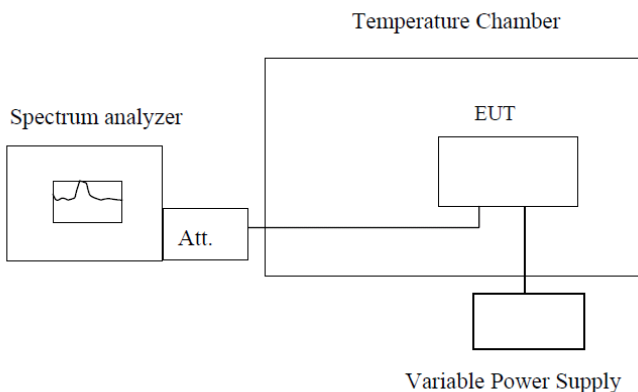
Test channel:		Middle					
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11560.00	20.36	21.64	42.00	68.20	-26.20	PK
V	17340.00	19.03	21.80	40.83	68.20	-27.37	PK
H	11560.00	16.73	21.83	38.56	68.20	-29.64	PK
H	17340.00	17.38	21.67	39.05	68.20	-29.15	PK

Test channel:		Highest					
Antenna Pol.	Frequency (MHz)	Reading Level (dBuV/m)	Factor (dBuV/m)	Measure Level (dBuV/m)	Limit (dBuV/m)	Over limit(dB)	Detector
V	11640.00	20.53	21.64	42.17	68.20	-26.03	PK
V	17460.00	18.12	21.80	39.92	68.20	-28.28	PK
H	11640.00	18.39	21.83	40.22	68.20	-27.98	PK
H	17460.00	16.44	21.67	38.11	68.20	-30.09	PK

Notes:

1. Measure Level = Reading Level + Factor.
2. The test trace is same as the ambient noise (the test frequency range: 18GHz~40GHz), therefore no data appear in the report.
3. This limit applies for using peak detector, if the test result on peak is lower than average limit, then average measurement needn't be performed.
4. Additional test of both optional antenna 1 and antenna 2, found optional antenna 1 is the worst case, and so only show the test result of optional antenna 1.

7.7 Frequency stability

Test Requirement:	FCC Part15 C Section 15.407(g)
Test Method:	ANSI C63.10:2013, FCC Part 2.1055
Limit:	Manufactures of U-NII devices are responsible for ensuring frequency stability such that an emission is maintained within the band of operation under all conditions of normal operation as specified
Test Procedure:	The EUT was setup to ANSI C63.4, 2003; tested to 2.1055 for compliance to FCC Part 15.407(g) requirements.
Test setup:	 Note : Measurement setup for testing on Antenna connector
Test Instruments:	Refer to section 5.10 for details
Test mode:	Refer to section 5.2 for details
Test results:	Pass

Measurement data:**Voltage VS Frequency stability**

Test Frequency: 5766MHz				
Temperature (°C)	Voltage (V)	Frequency Deviation (Hz)	Frequency Deviation (ppm)	Result
25	DC 11.55	2000.00	0.346861	PASS
25	DC 10.40	2000.00	0.346861	PASS
25	DC 12.71	2000.00	0.346861	PASS

Test Frequency: 5785MHz				
Temperature (°C)	Voltage (V)	Frequency Deviation (Hz)	Frequency Deviation (ppm)	Result
25	DC 11.55	1000.00	0.172861	PASS
25	DC 10.40	2000.00	0.345722	PASS
25	DC 12.71	2000.00	0.345722	PASS

Test Frequency: 5780MHz				
Temperature (°C)	Voltage (V)	Frequency Deviation (Hz)	Frequency Deviation (ppm)	Result
25	DC 11.55	2000.00	0.346021	PASS
25	DC 10.40	3000.00	0.519031	PASS
25	DC 12.71	2000.00	0.346021	PASS

Temperature VS Frequency stability

Test Frequency: 5766MHz				
Voltage (V)	Temperature (°C)	Frequency Deviation (Hz)	Frequency Deviation (ppm)	Result
DC 11.55	-20	1000.00	0.173430	PASS
DC 11.55	-10	1000.00	0.173430	PASS
DC 11.55	0	2000.00	0.346861	PASS
DC 11.55	10	2000.00	0.346861	PASS
DC 11.55	20	2000.00	0.346861	PASS
DC 11.55	30	3000.00	0.520291	PASS
DC 11.55	40	3000.00	0.520291	PASS
DC 11.55	50	2000.00	0.346861	PASS

Test Frequency: 5785MHz				
Voltage (V)	Temperature (°C)	Frequency Deviation (Hz)	Frequency Deviation (ppm)	Result
DC 11.55	-20	3000.00	0.518583	PASS
DC 11.55	-10	3000.00	0.518583	PASS
DC 11.55	0	2000.00	0.345722	PASS
DC 11.55	10	2000.00	0.345722	PASS
DC 11.55	20	2000.00	0.345722	PASS
DC 11.55	30	1000.00	0.172861	PASS
DC 11.55	40	2000.00	0.345722	PASS
DC 11.55	50	2000.00	0.345722	PASS

Test Frequency: 5780MHz				
Voltage (V)	Temperature (°C)	Frequency Deviation (Hz)	Frequency Deviation (ppm)	Result
DC 11.55	-20	1000.00	0.173010	PASS
DC 11.55	-10	2000.00	0.346021	PASS
DC 11.55	0	3000.00	0.519031	PASS
DC 11.55	10	2000.00	0.346021	PASS
DC 11.55	20	2000.00	0.346021	PASS
DC 11.55	30	3000.00	0.519031	PASS
DC 11.55	40	3000.00	0.519031	PASS
DC 11.55	50	3000.00	0.519031	PASS

8 Test Setup Photo

Reference to the **appendix I** for details.

9 EUT Constructional Details

Reference to the **appendix II** for details.

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